Name:

at1113exam: Expand, factor, and solve quadratics (v319)

1. Solve the equation.

$$(5x + 8)(4x - 7) = 0$$

$x = \frac{-8}{5}$ $x = \frac{7}{4}$

2. Expand the following expression into standard form.

$$(7x + 9)(7x - 9)$$

$49x^2 - 63x + 63x - 81$

$49x^2 - 81$

3. Expand the following expression into standard form.

$$(5x + 7)^2$$

$25x^2 + 35x + 35x + 49$

$25x^2 + 70x + 49$

4. Expand the following expression into standard form.

$$(4x + 9)(3x + 2)$$

$12x^2 + 8x + 27x + 18$

$12x^2 + 35x + 18$

5. Factor the expression.

$$49x^2 - 36$$

$$(7x + 6)(7x - 6)$$

6. Solve the equation with factoring by grouping.

$$18x^2 + 15x + 12x + 10 \;=\; 0$$

$$(3x + 2)(6x + 5) = 0$$

$$x = \frac{-2}{3} \qquad x = \frac{-5}{6}$$

7. Factor the expression.

$$x^2 - 9x + 18$$

$$(x - 6)(x - 3)$$

8. Solve the equation.

$$9x^2 - 11x - 31 \;=\; 4x^2 + 2x - 3$$

$$5x^2 - 13x - 28 = 0$$

$$(5x + 7)(x - 4) = 0$$

$$x = \frac{-7}{5} \qquad x = 4$$